

# The Network as a Programmable Platform

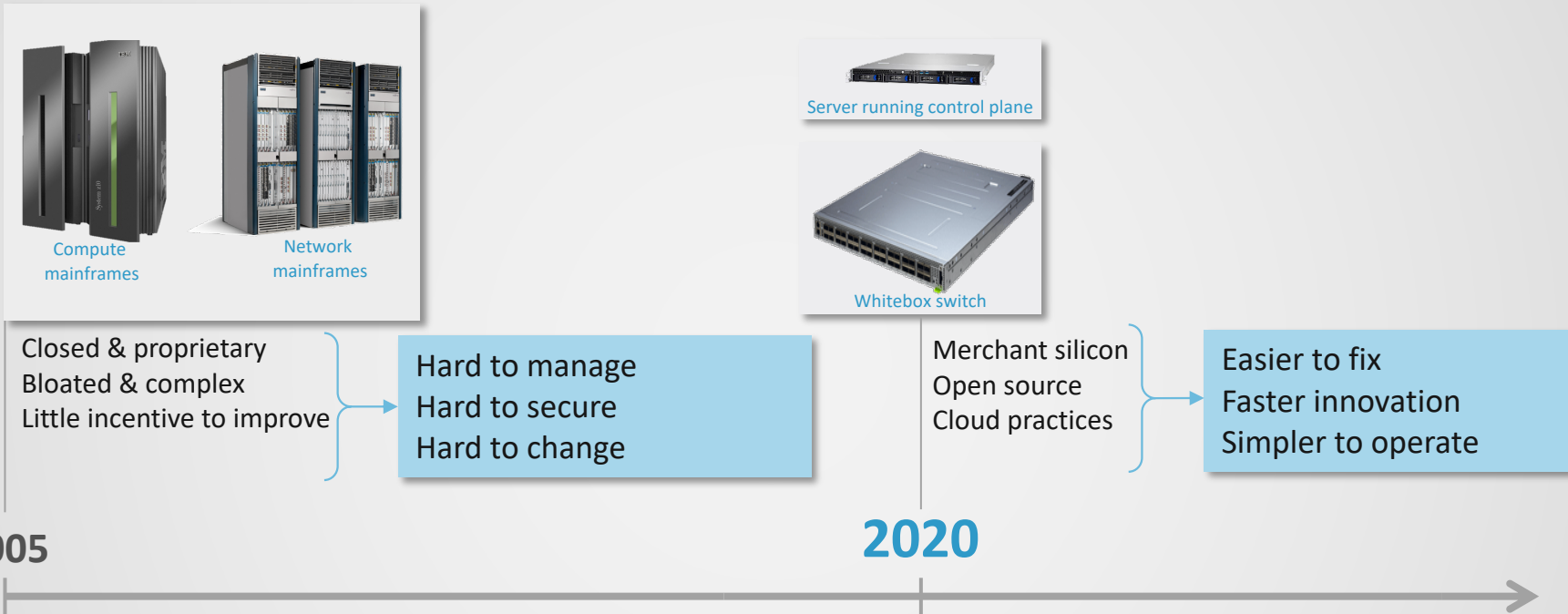
A Look at 5G Through an SDN Lens

*Larry Peterson*

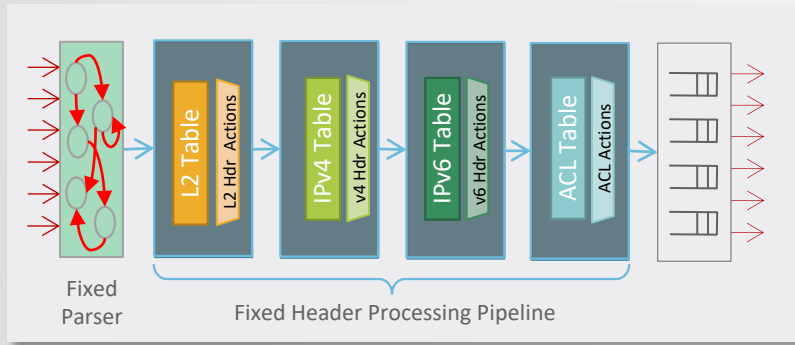
*CTO*

*Open Networking Foundation*

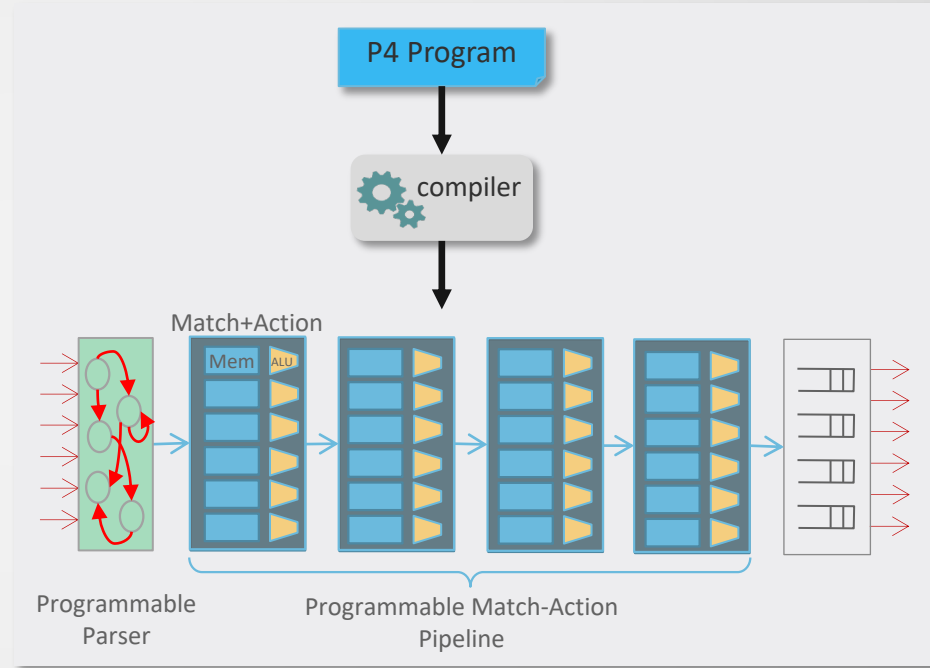
# SDN JOURNEY (SO FAR)



# SDN JOURNEY (IN PROGRESS)



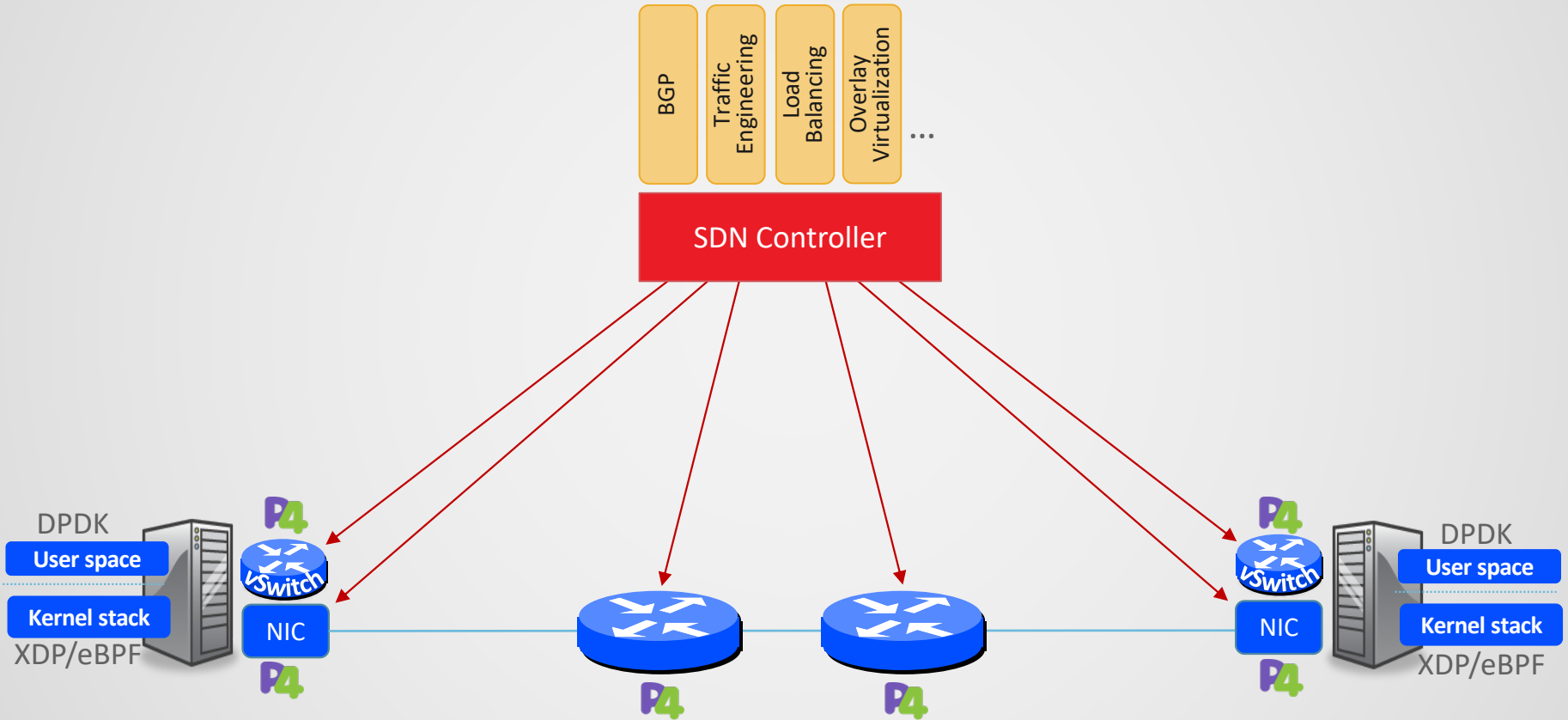
Fixed function switches and NICs



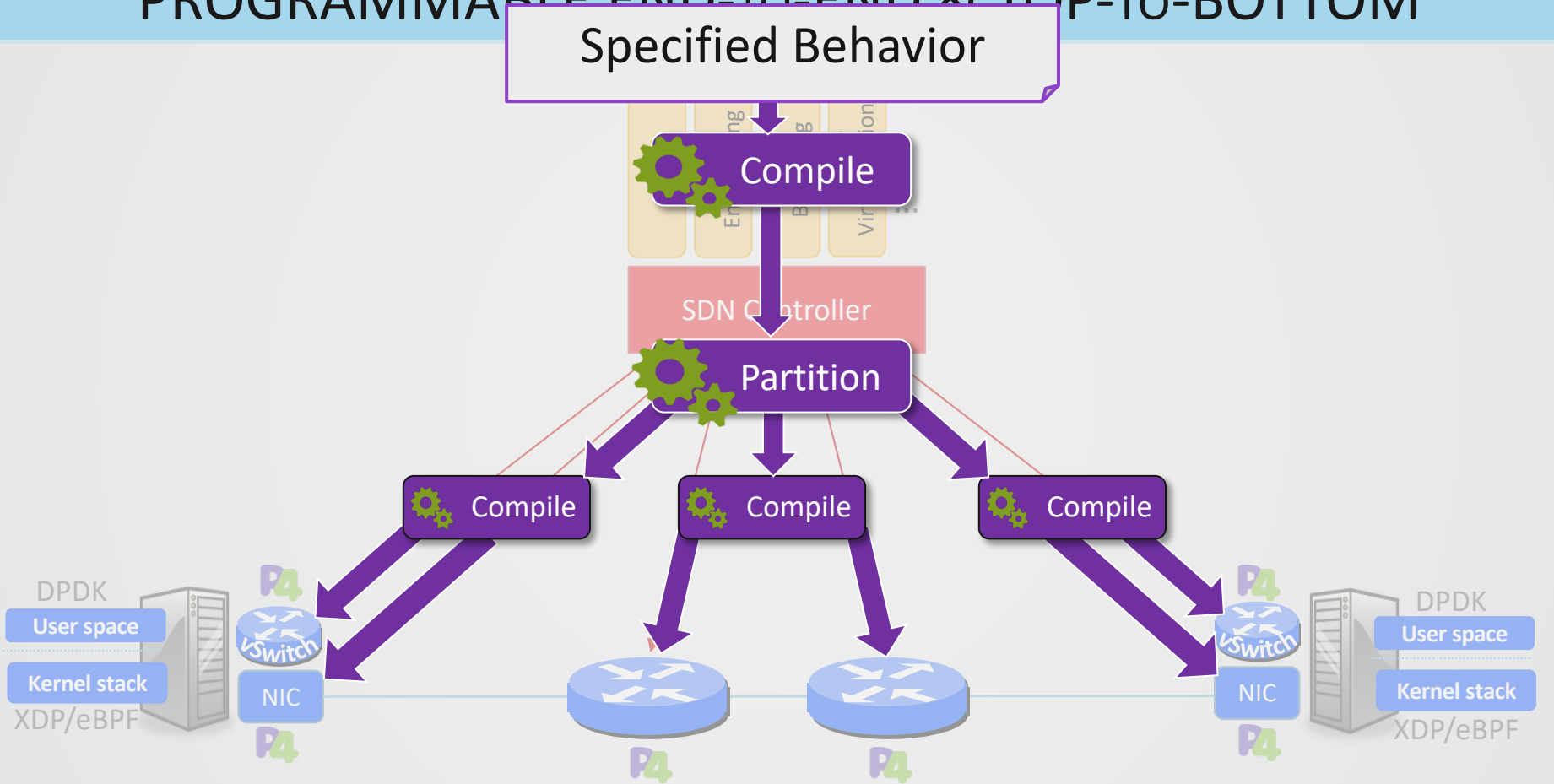
Programmable switches and smartNICs

So what happens next?

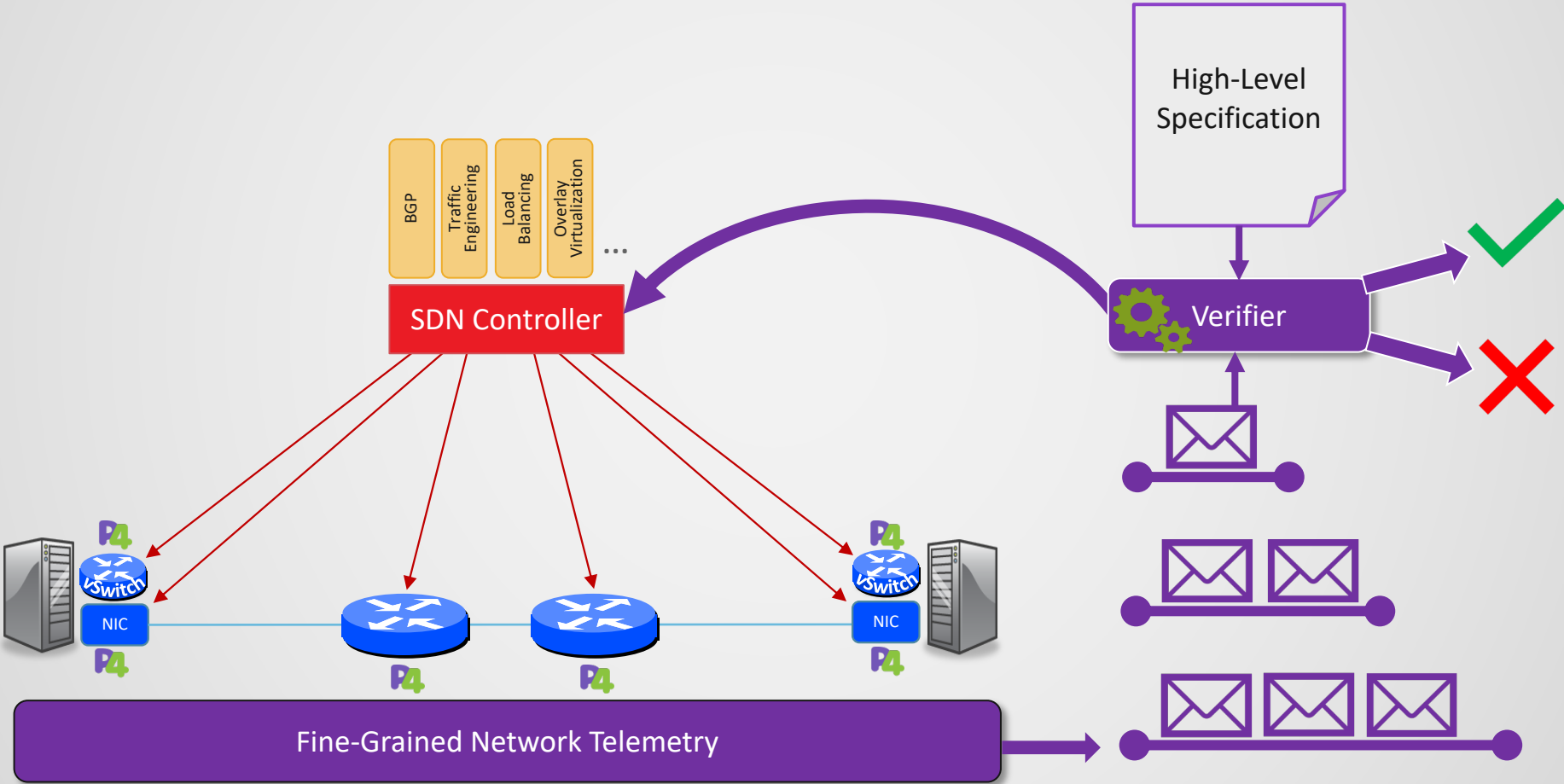
# PROGRAMMABLE END-TO-END & TOP-TO-BOTTOM



# PROGRAMMABLE END-TO-END & TOP-TO-BOTTOM



# VERIFIABLE CLOSED-LOOP CONTROL



# PROGRAMMABLE END-TO-END & TOP-TO-BOTTOM

Networks, for the first time, will be:

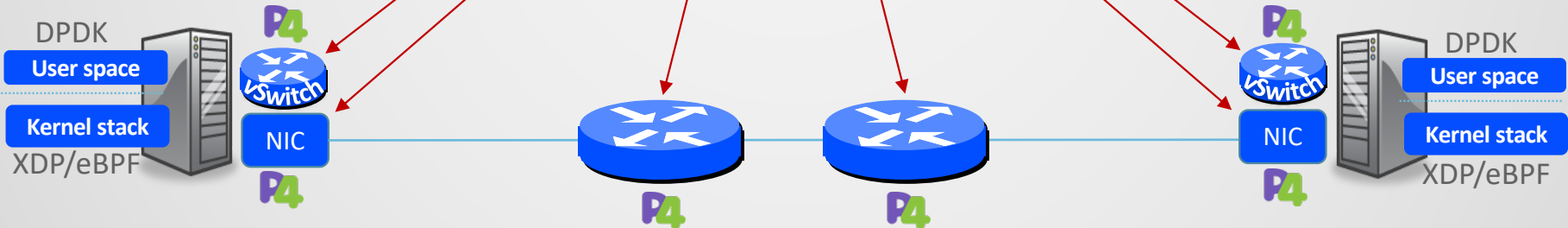
- Programmable end-to-end
- Specified top-to-bottom
- Defined entirely by software



SDN Controller

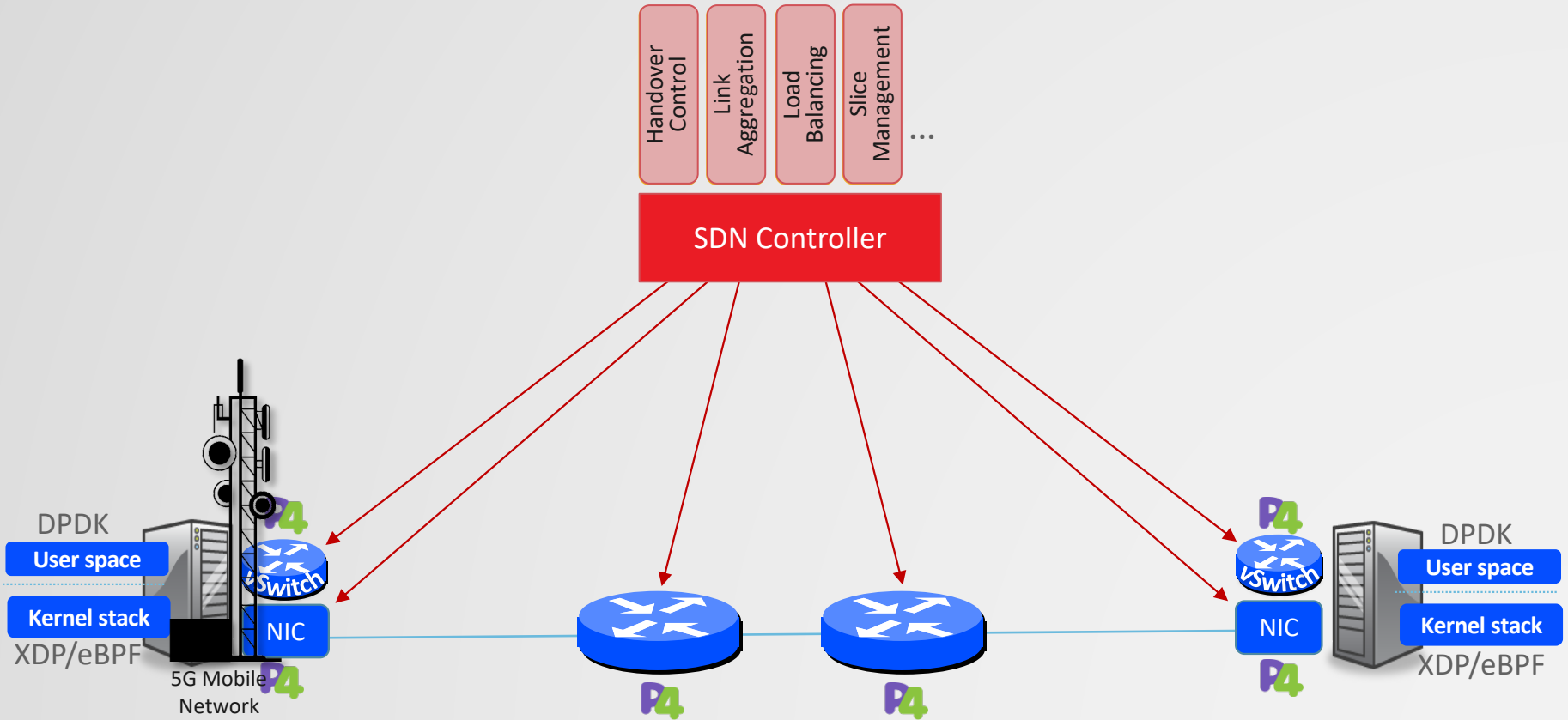
This creates new possibilities:

- Verify network is “correct by construction”
- Measure and validate, in real-time, against network specification
- Correct bugs through closed-loop control



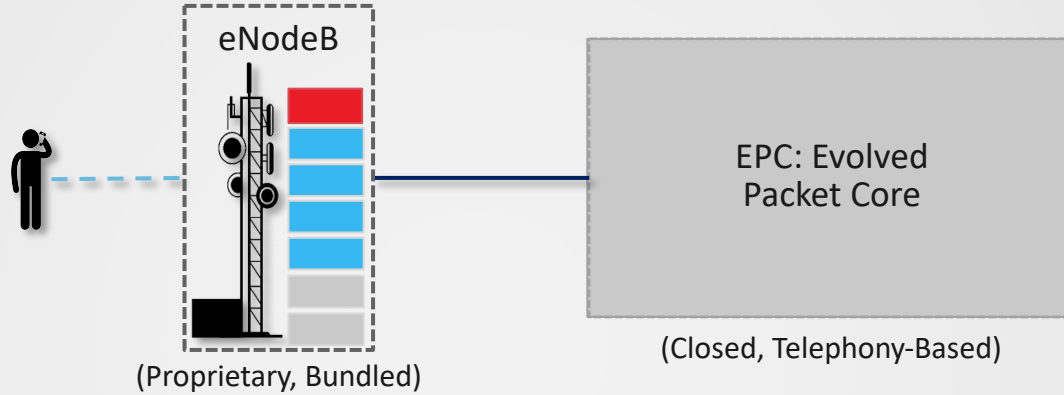


# PROGRAMMABLE END-TO-END & TOP-TO-BOTTOM

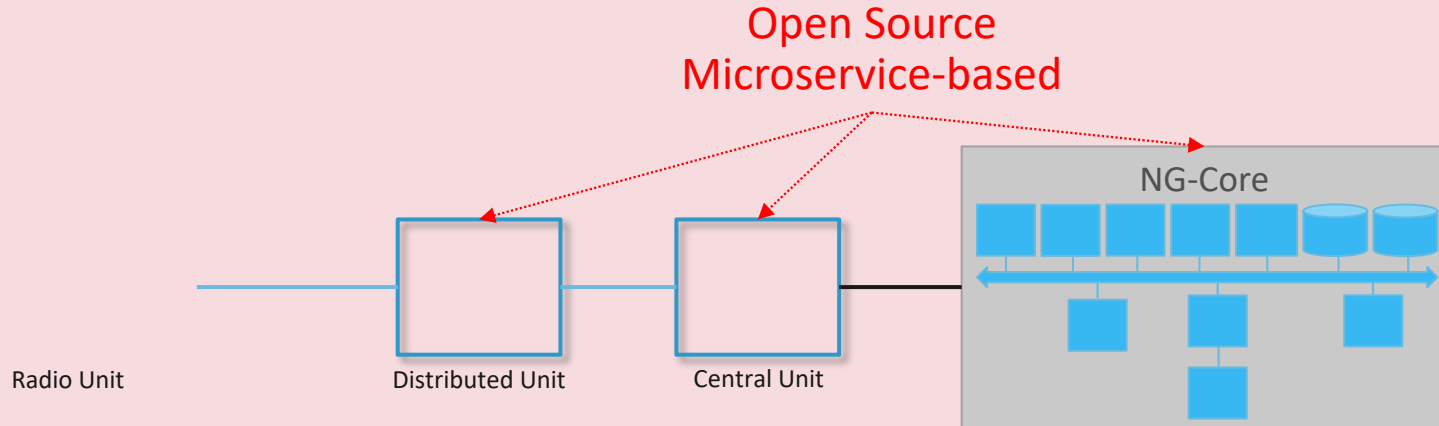


# 5G TRANSFORMATION

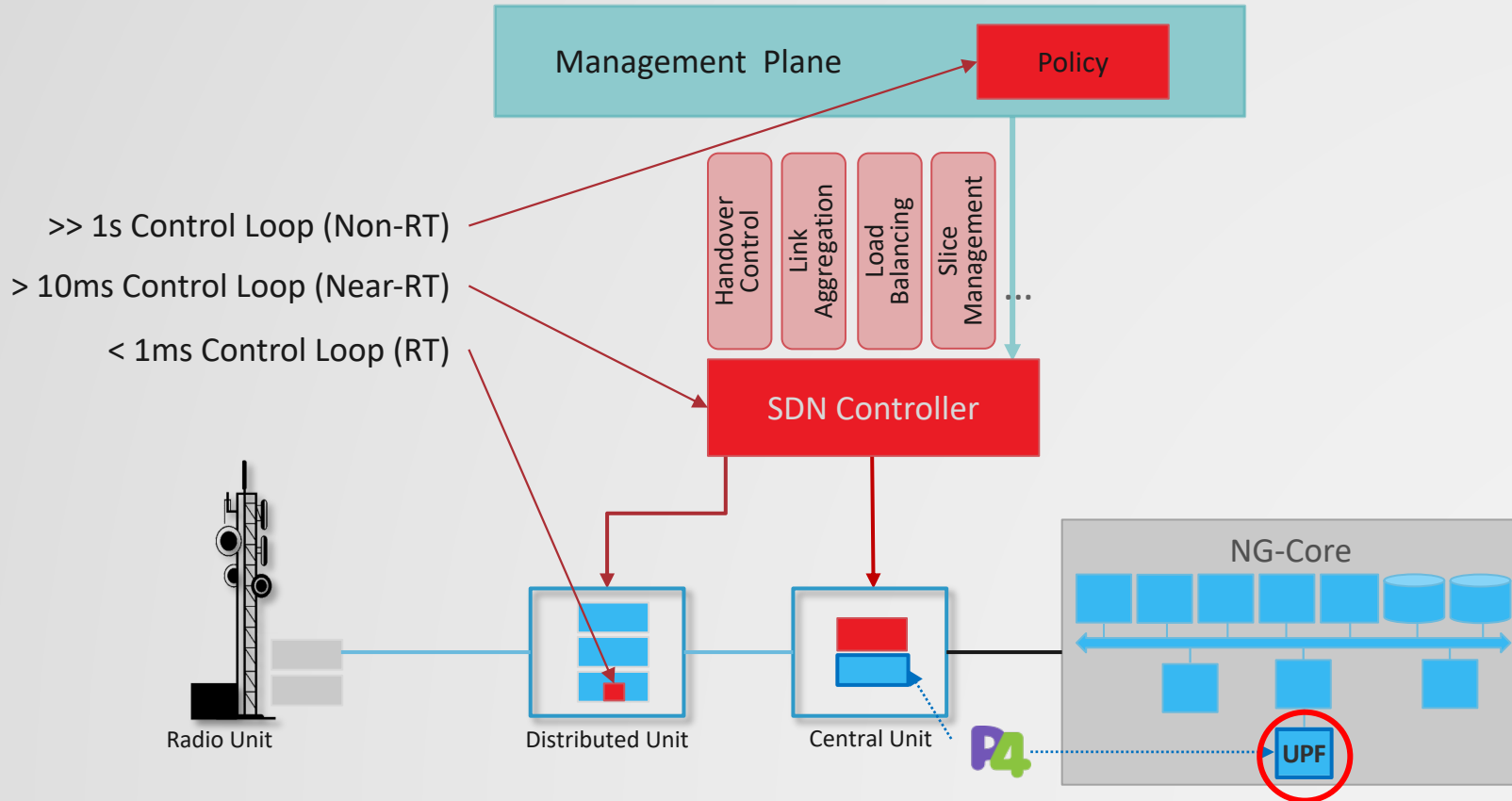
4G



5G



# PROGRAMMABLE END-TO-END & TOP-TO-BOTTOM



# DEEP PROGRAMMABILITY

